

Road Accidents/Fatality/Injury Report

India has a rural road network of over 3,000,000 km, and urban roads total more than 250,000 km. The national highways, with a total length of 65,569 km, serve as the arterial network across the country. Roads carry about 61% of the freight and 85% of the passenger traffic. Highways total about 66,000 km (2% of all roads) and carry 40% of the road traffic.

The automobile industry produced a total 23,960,940 vehicles including passenger vehicles, commercial vehicles, three wheelers, two wheelers and quadricycle in April-March 2016 as against 23,358,047 in April-March 2015, registering a marginal growth of 2.58 percent over the same period last year. Domestic passenger vehicle sales in the financial year ended on March 2016 registered a growth of 7.87 percent. Domestic car sales stood at 20,25,479 units in 2015-16 as compared with 18,77,706 units in the 2014-15. This is the highest growth in five years. The previous best growth was in 2010-11 when car sales rose 29.08 percent.

With a combination of higher investments in urban and rural road infrastructure, increasing sales of motor vehicles, growth rates in the economy, the trend of increasing road traffic fatalities may be exacerbated.

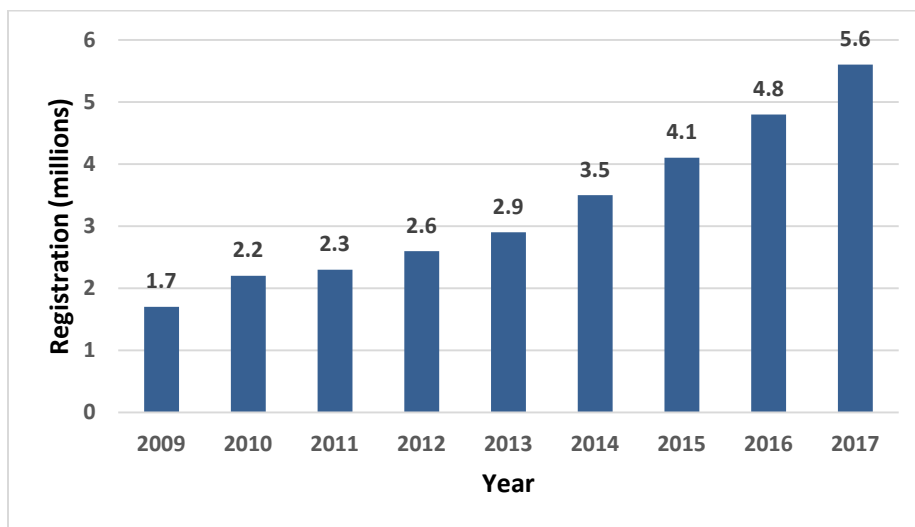


Fig: Passenger vehicle registration in India from 2009-2017

Road accident statistics of India

India is a signatory to Brasilia Declaration and is committed to reduce the number of road accidents and fatalities by 50 per cent by 2020. However, with one of the highest motorization growth rate in the world accompanied by rapid expansion in road network and urbanization over the years, our country is faced with serious impacts on road safety levels. Today road traffic injuries are one of the leading causes of deaths, disabilities and hospitalizations with severe socioeconomic costs across the world.

Table: State/UT wise total no. of road accidents, person killed/injured during 2005-2015

Year	Total number of road accidents (in numbers)	Total number of persons killed (in numbers)	Total number of persons injured (in numbers)
2005	439255	94968	465282
2006	460920	105749	496481
2007	479216	114444	513340
2008	484704	119860	523193
2009	486384	125660	515458
2010	499628	134513	527512
2011	497686	142485	511394
2012	490383	138258	509667
2013	486476	137572	494893
2014	489400	139671	493474
2015	501423	146133	500279

Table: State/UT wise statistical data during 2005-2014

Year	Number of accidents per lakh population	Number of accidents per ten thousand vehicles	Number of accidents per ten thousand kms of roads	Number of persons killed per lakh population	Number of persons killed per ten thousand vehicles	Number of persons killed per ten thousand kms of roads
2005	40.1	53.9	1153.2	8.7	11.7	249.3
2006	41.4	51.4	1187.7	9.5	11.8	272.5
2007	42.5	49.6	1193.1	10.1	11.8	284.9
2008	42.3	46	1179.4	10.5	11.4	291.7
2009	41.9	42.3	1087.7	10.8	10.9	281
2010	42.5	39.1	1090.3	11.4	10.5	293.5
2011	41.1	35.1	1064.2	11.8	10	304.7
2012	40.6	30.7	1007.9	11.4	8.7	284.2
2013	39.8	26.8	929.8	11.2	7.6	262.9
2014	39.5	NA	NA	11.3	NA	NA

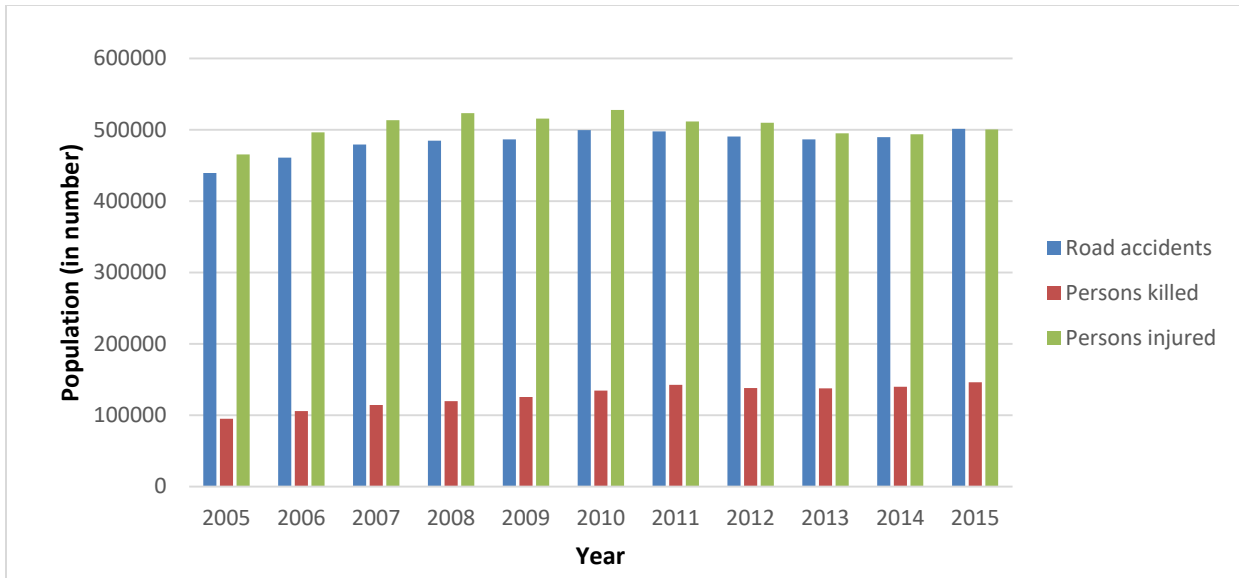


Fig: Total number of road accidents, person killed/injured in India during 2005-2015

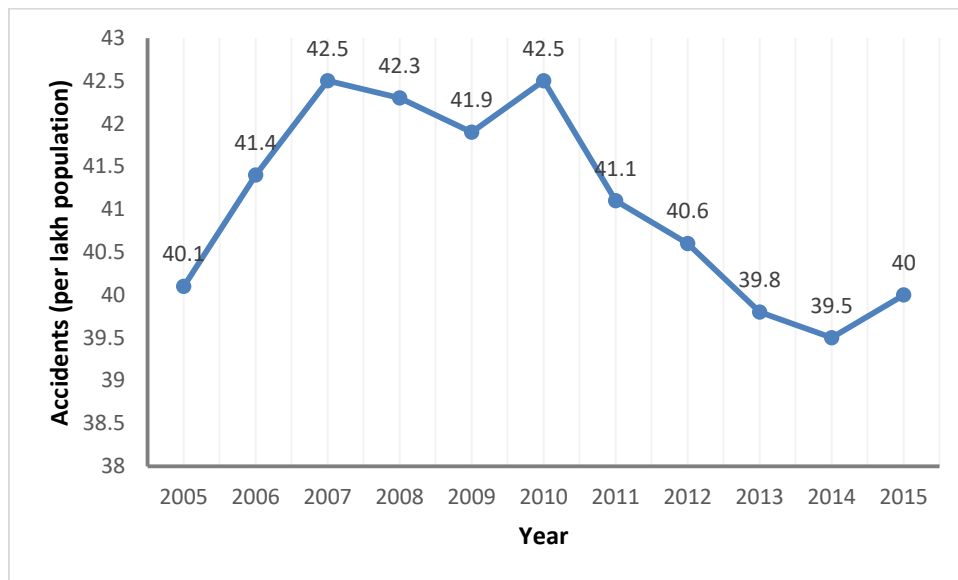
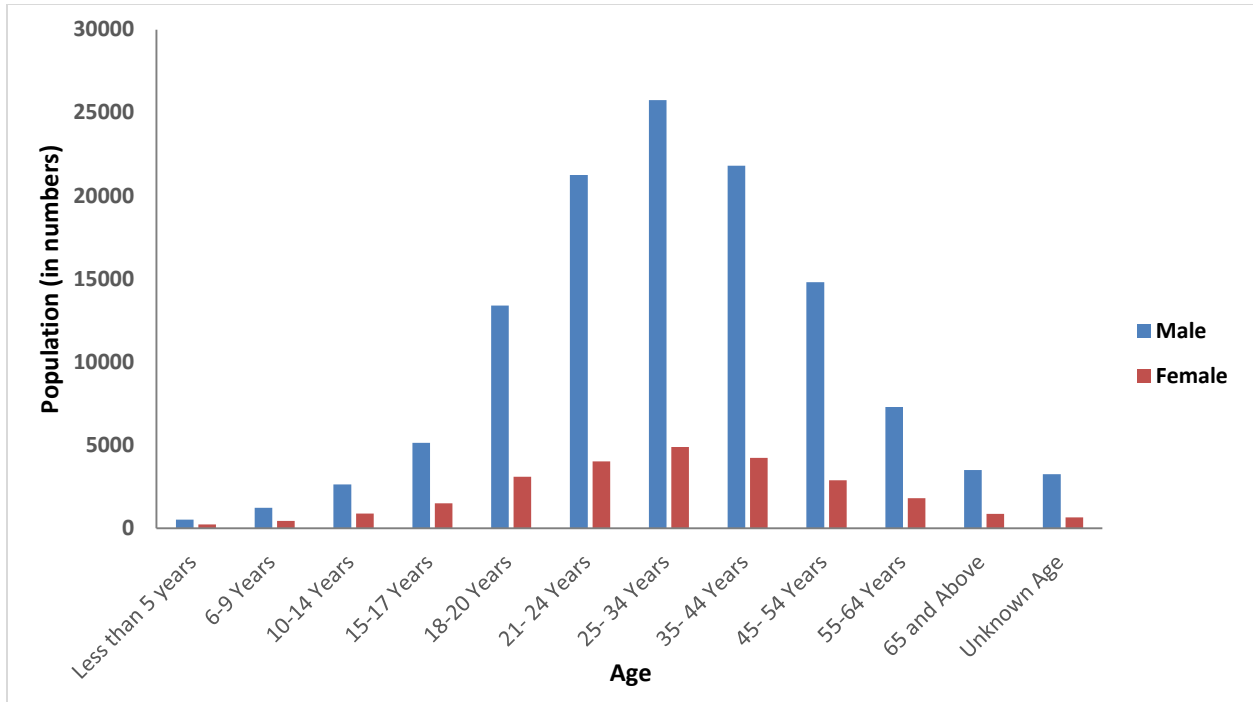


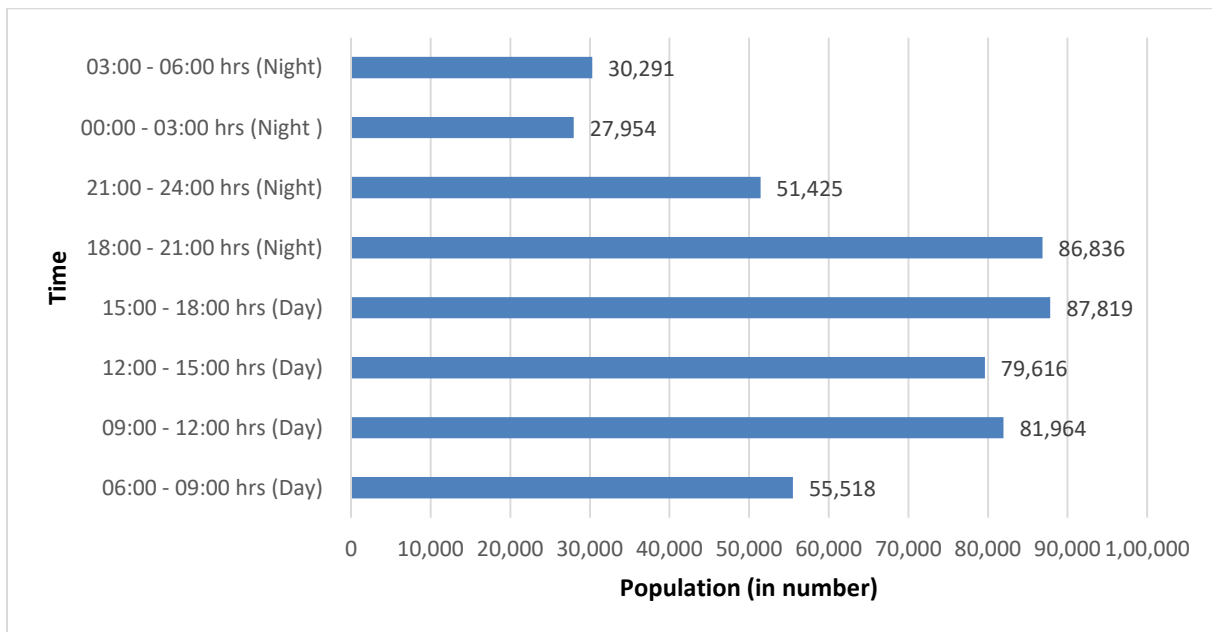
Fig: Number of Road Accidents per Lakh Population (2005-2015)

“DRIVE SAFE - RULES ARE YOUR BEST TOOLS”

Age of Persons Killed (Gender wise) in India during 2015

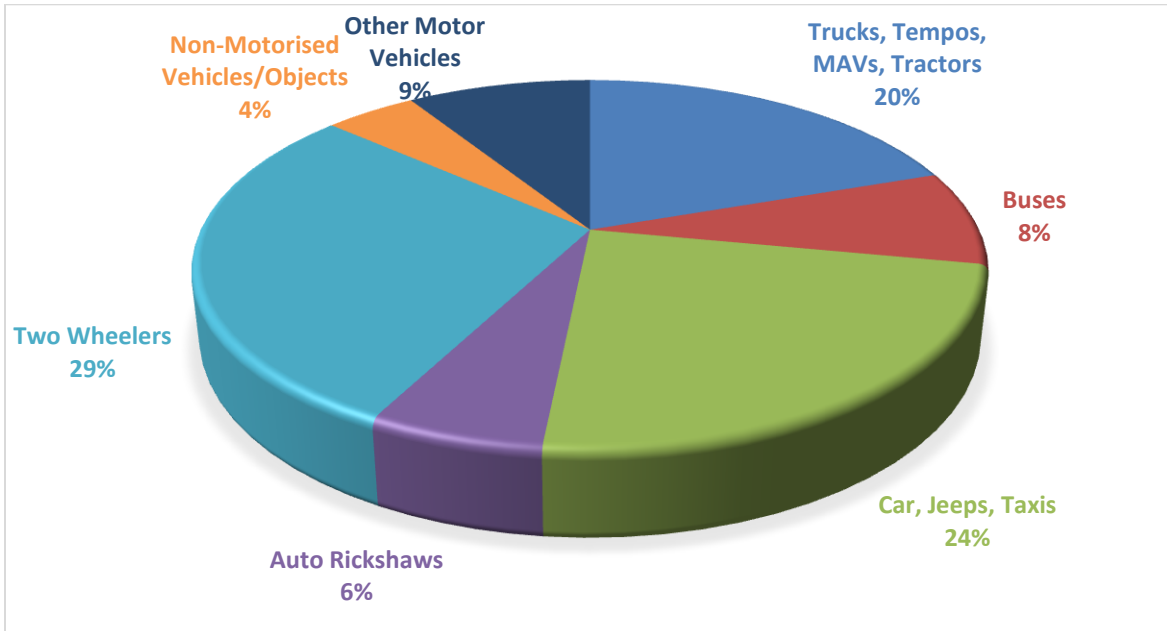


Road Accidents as per the Time of Occurrence in India during 2015

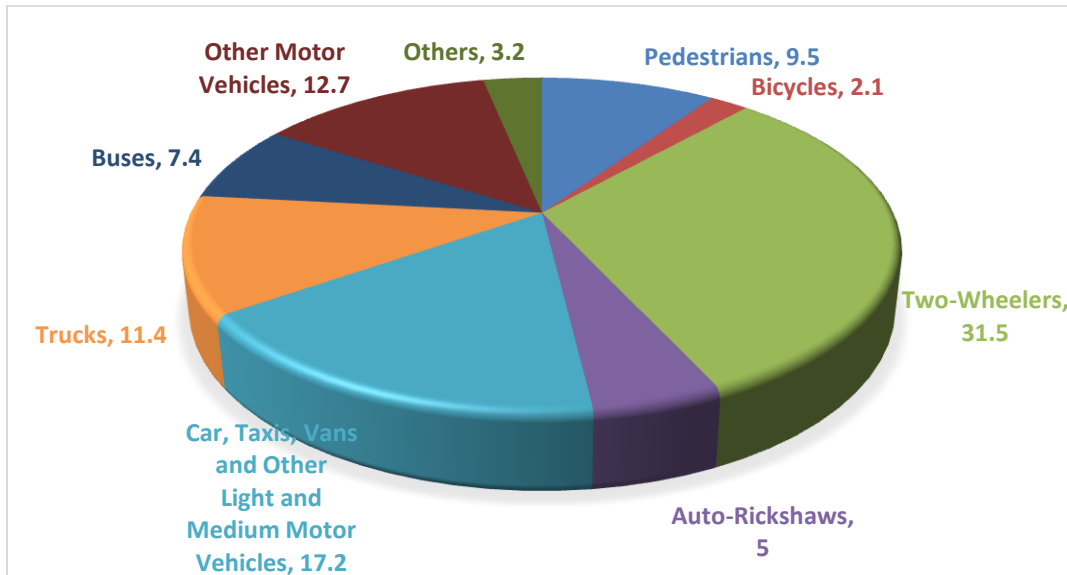


“BE ALERT! ACCIDENTS HURT”

Per cent share in total road accidents by type of motor vehicle involved in India during 2015



Total Number of Persons Killed in Road Accidents in terms of Road User Categories in India during 2015



*Others includes: animal drawn vehicles, cycle rickshaws, hand carts, rickshaws, and other persons

“YOUR DESTINATION IS A REWARD FOR SAFE DRIVING”

Cost of Road Accidents

Accidents carry high economic and social costs, which are not easy to ascertain. The cost of road related injuries and accidents can be assessed in terms of:

- medical costs
- other costs related to administrative, legal and police expenditure
- collateral damage in terms of damage to property and motor vehicle and
- loss due to income foregone arising out of absence from work or impairment/disability or death.

Besides accident survivors often live poor quality of life and have to live with pain and suffering which are difficult to estimate. Hence it is imperative to assess the magnitude and dimensions of road accidents so as to assist in formulating road safety policies.

In economic terms, the cost of road crash injuries is estimated at roughly 1 percent of gross national product (GNP) in low-income countries, 1.5 percent in middle-income countries and 2 percent in high-income countries.

“ALERT TODAY – ALIVE TOMORROW”

Road accidents in Punjab

In the past 20 - 30 years, road accident fatalities and injuries are increasing at an alarming rate in India including Punjab. The main reasons are phenomenal increase in vehicle population, along with lack of matching initiatives for improvements in road infrastructure/environment and application of modern traffic control and management tools to tackle such problems effectively and efficiently. Economy of the Punjab is based upon Agriculture.

State is spread in the area of about 50,362 square kilometer and very well connection with the means of Surface Transport to fulfill state's own domestic demand. Primary state's transportation need is divided into three parts, intercity connectivity, intra city connectivity and rural connectivity. Majority of the passenger trip start and end within the state and only 3-4% of the total traffic is through traffic. One of the goals of the Government of Punjab is for the transportation sector to move to an integrated and sustainable transportation system supporting Punjab's social and economic development and enhancing Punjab's competitiveness in the Indian and global markets. All this cannot be achieved without improving the road safety conditions in the state.

Further Road Safety is a multi-sectoral and multi-dimensional issue. Road safety is a shared, multi-sectoral, responsibility of the government and a range of civil society stakeholders.

The success of road safety strategies in all countries depends upon a broad base of support and common action from all stakeholders.

During the year 2015, the highest accident severity (road accident deaths per 100 accidents) was reported in Mizoram (102.9 per cent) followed by **Punjab (73.0 per cent)** and Dadra & Nagar Haveli (60.9 per cent). The State/UT-wise severity of road accidents in India is represented in following graph.

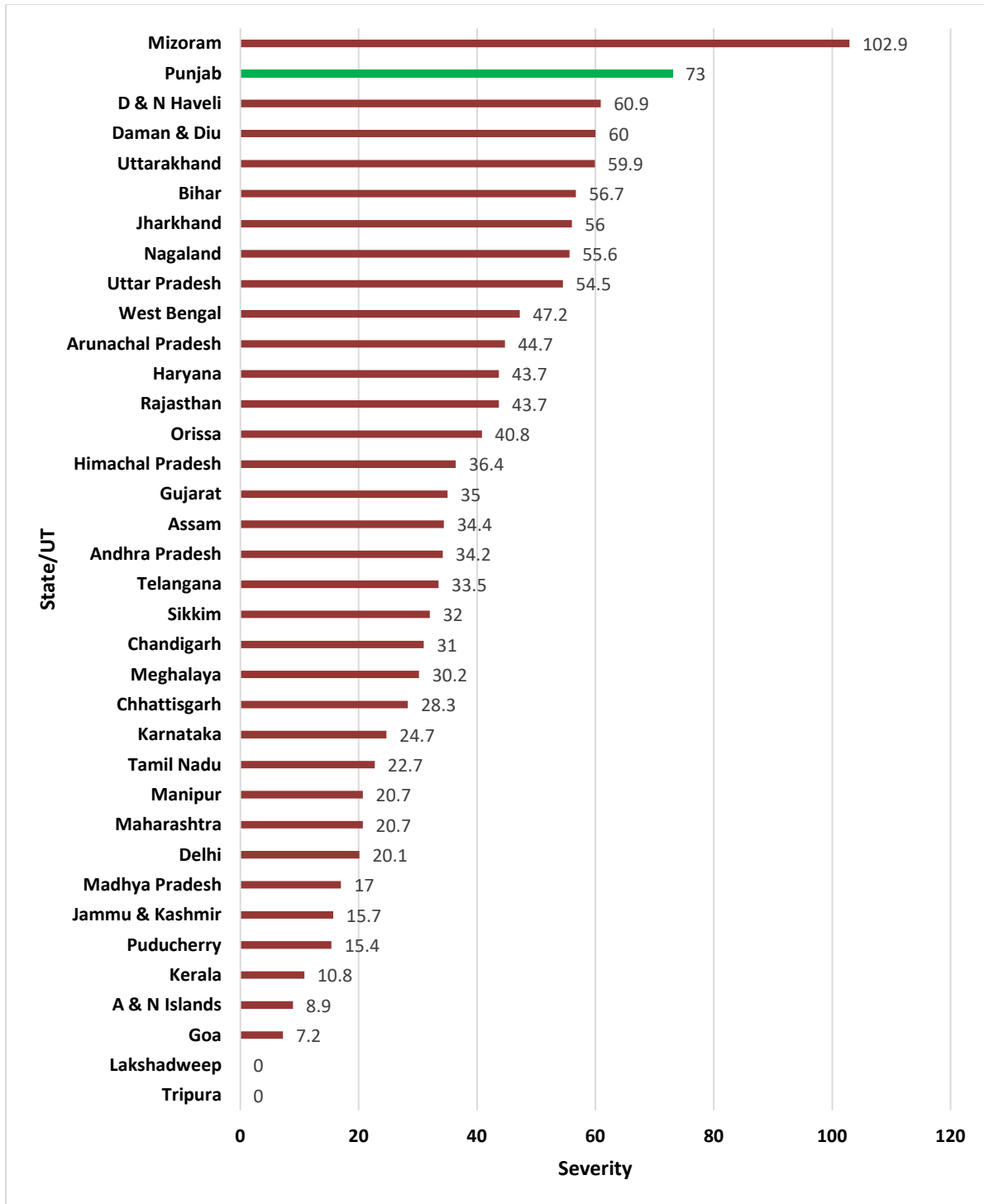


Fig: State/UT-wise severity of road accidents in India for 2015

A comparison of States which accounted for 83.6 per cent of share in road accident fatalities during the calendar year 2015 reveals that **Punjab** stood **12th** in road accident fatalities in the entire country with a share of 3.3%. A comparative analysis of top 13 States for the calendar year 2015 is tabulated below.

Table: Comparative analysis of top 13 States for 2015

Sr. no.	States	Percentage share	Total number of persons killed
1.	Uttar Pradesh	12.1	17666
2.	Tamil Nadu	10.7	15642
3.	Maharashtra	9.0	13212
4.	Karnataka	7.4	10856
5.	Rajasthan	7.2	10510
6.	Madhya Pradesh	6.4	9314
7.	Andhra Pradesh	5.7	8297
8.	Gujarat	5.6	8119
9.	Telangana	4.9	7110
10.	West Bengal	4.3	6234
11.	Bihar	3.7	5421
12.	Punjab	3.3	4893
13.	Haryana	3.3	4879

Table: Total no. of road accidents, person killed/injured in Punjab during 2005-2015

Year	Total number of road accidents (in numbers)	Total number of persons killed (in numbers)	Total number of persons injured (in numbers)
2005	4599	2793	4131
2006	4927	3052	4307
2007	5208	3363	4430
2008	5115	3206	4196
2009	5570	3668	4486
2010	5507	3542	4071
2011	6513	4931	4081
2012	6341	4820	3997
2013	6323	4588	4383
2014	6391	4621	4127
2015	6638	4893	4410

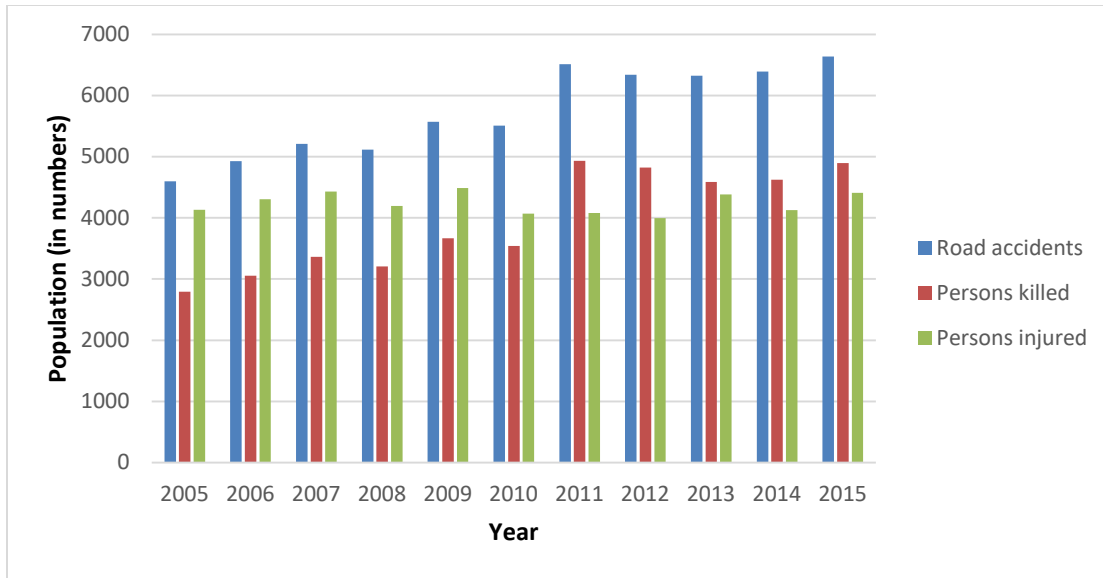
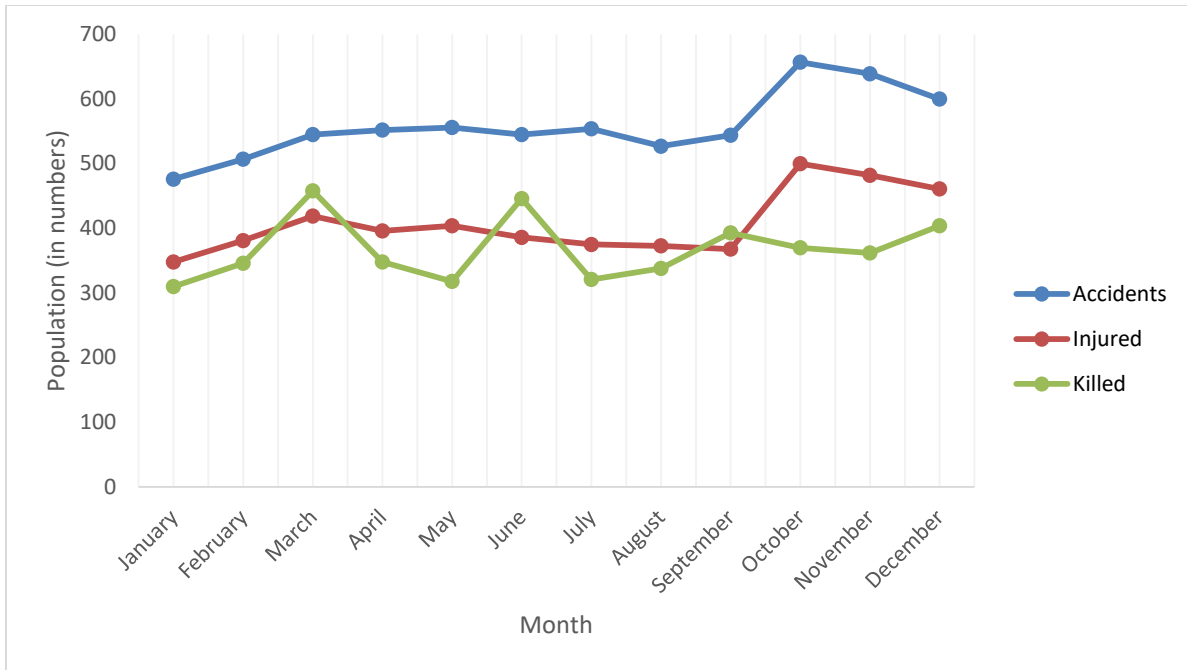


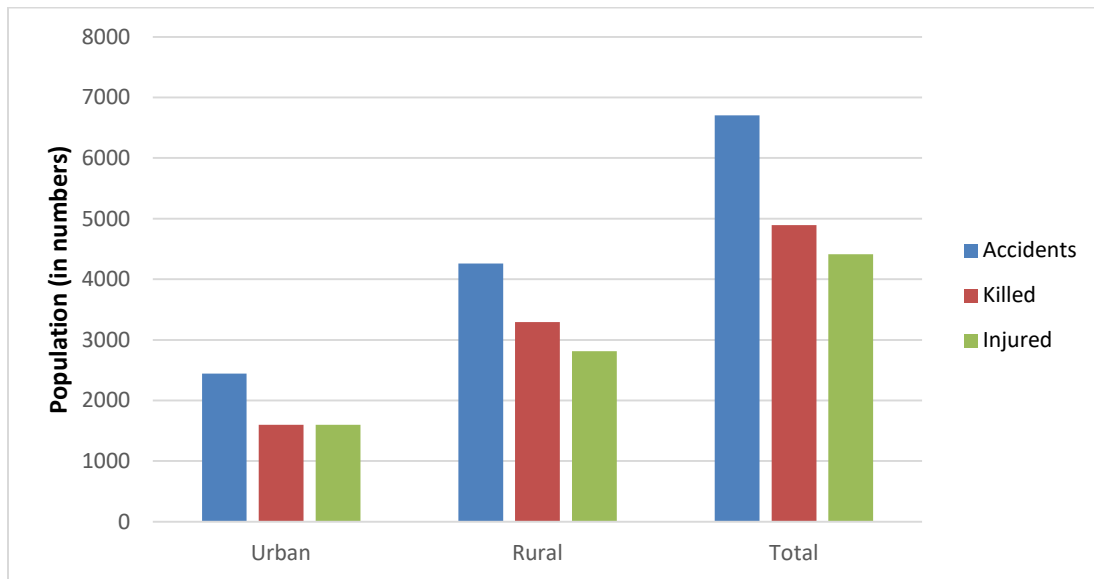
Fig: Total number of road accidents, person killed/injured in Punjab during 2005-2015

Month - Wise Total Number of Road Accidents in Punjab during 2015

Month	Accidents	Injured	Killed
January	476	348	310
February	507	381	346
March	545	419	458
April	552	396	348
May	556	404	318
June	545	386	446
July	554	375	321
August	527	373	338
September	544	368	393
October	657	500	370
November	639	482	362
December	600	461	404
Total	6702	4893	4414



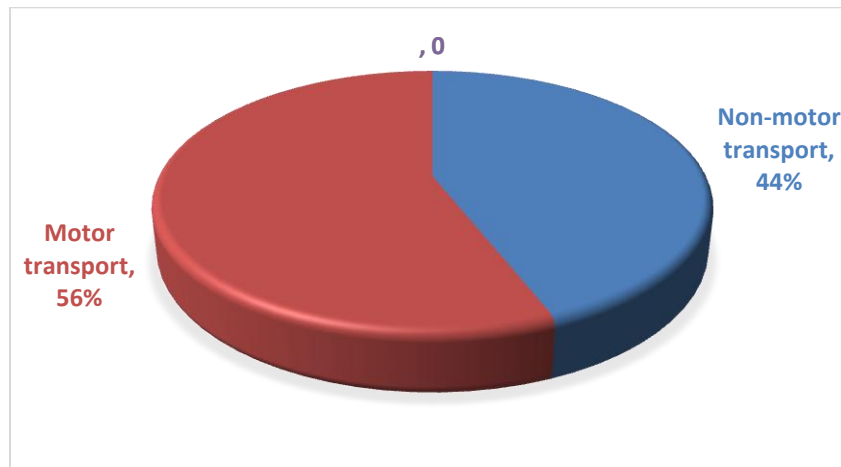
Total number of accidents, number of persons killed and number of persons injured in road accidents in urban & rural in Punjab during 2015



“ALL ACCIDENTS ARE PREVENTABLE”

Motorized and non-motorized vehicles in Punjab during 2015

Reported data represents that 44% of the total vehicle in Punjab are Non-motor vehicles mainly animal driver or on peddle power, as shown in figure below.



Road accidents in Ludhiana

Ludhiana, the first metropolitan center of the state of Punjab, located on National Highway 100 km north west of Chandigarh, the capital of Punjab and Haryana, 310 km from New Delhi and 150 km from Amritsar, has emerge as the most vibrant and important business center of Punjab. Ludhiana is the largest city in Punjab, both in terms of area and population. The city is spread over an area of 159.37 sq. km.

With a view to assess the safety of the road users in Ludhiana Metropolis, it is important to study the road accidents in the city as per the figures made available by the traffic police, number of road accidents recorded in 2014 were 475 whereas in 2015 count was 489. Casualties reduced from 318 in 2014 to 271 in 2015. The reduction of casualties can be attributed to the slowing of the speed over a period of time due to extreme congestion.

Table: Total no. of road accidents, person killed/injured in Ludhiana during 2011-2015

Year	Total number of road accidents (in numbers)	Total number of persons killed (in numbers)	Total number of persons injured (in numbers)
2011	444	294	189
2012	430	262	250
2013	519	324	291
2014	475	318	271
2015	489	271	324
2016 (upto November) *	98	128	173

*Data collected from Ludhiana Tribune

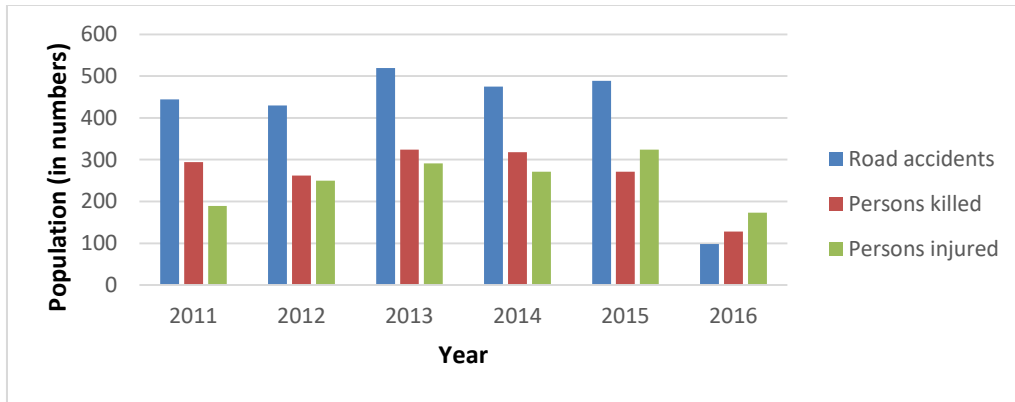


Fig: Total number of road accidents, person killed/injured in Ludhiana during 2011-2016.

If existing circumstances prevails then by 2020 the road traffic accidents (RTA) are expected to be on third step (other two being clinical depression and heart disease) therefore producing huge financial, monetary burden on the economy of our country. Increasing traffic overload, distinct geographical situation of Ludhiana (well connected to every corner of the country) as well as hosiery centre, incidence of road traffic accidents prove to be factors for this.

Severity in Million Plus Cities including Ludhiana

Out of the 53 million plus cities, 50 million plus cities reported road accident data for 2015. These 50 million plus cities accounted for a share of 22.1 per cent in total road accidents in the country during 2015 as against 22.7 percent in 2014. During 2015, in million plus cities 11.3 per cent persons were killed in road accidents as against 11.9 percent in 2014. Whereas, 16.4 per cent persons were injured in road accidents in the country during 2015 as against 16.8 percent in 2014. This is indicated in the graph below.

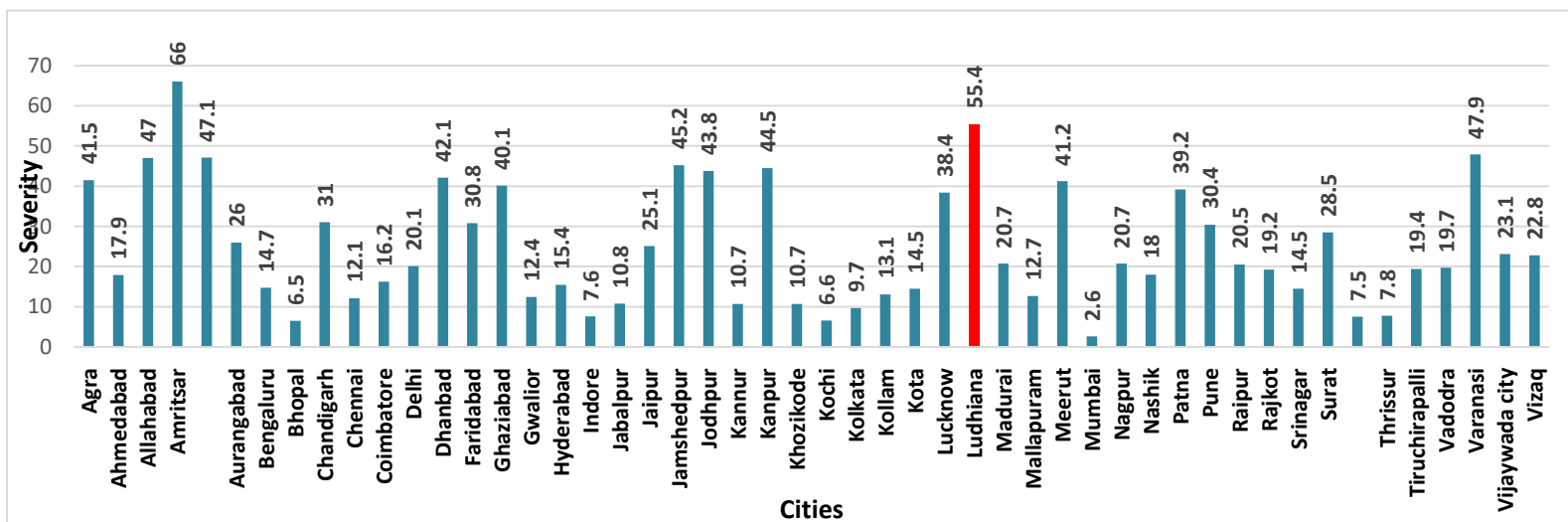
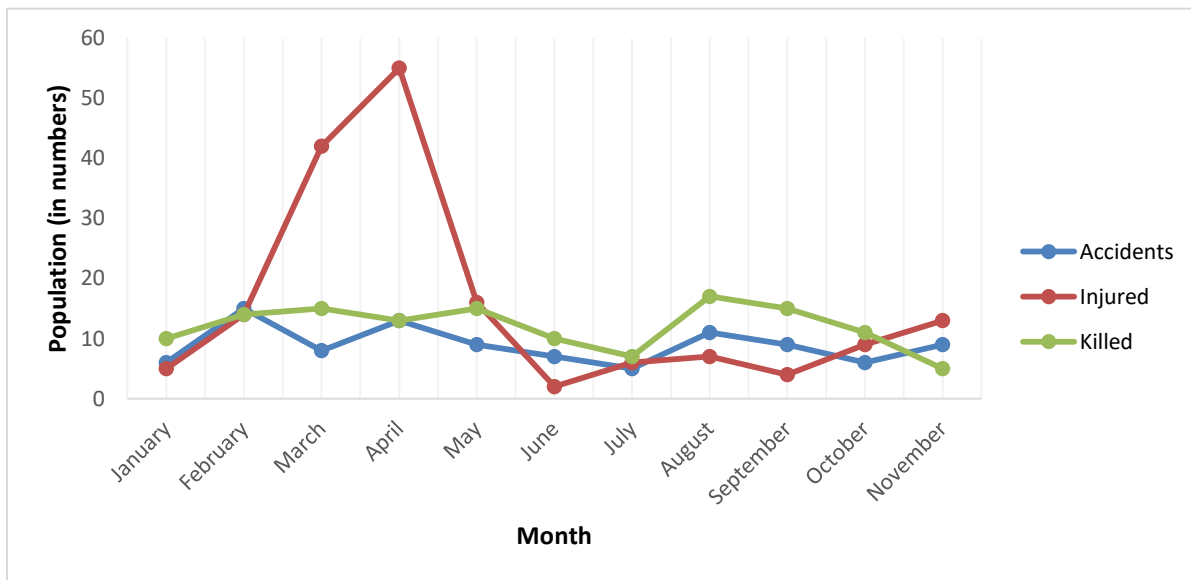


Fig: Severity of Road Accidents across States/UTs during 2015

The cities which reported a very high accident severity included Amritsar (66.0%), **Ludhiana (55.4 %)**, Varanasi (47.9 %), Asansol - Durgapur (47.1 %), Allahabad (47.0 %), and Jamshedpur (45.2 %).

Month - Wise Total Number of Road Accidents during 2015

Month	Accidents	Injured	Killed
January	6	5	10
February	15	14	14
March	8	42	15
April	13	55	13
May	9	16	15
June	7	2	10
July	5	6	7
August	11	7	17
September	9	4	15
October	6	9	11
November	9	13	5



“TO AVOID DEATH, USE SEAT BELT!”

Nature and Causes of Road Accidents

According to Austroads (1994), road accidents occur as the result of one, or more than one of the following factors:

- Human factors
- Vehicle factors
- Road and environment factors

Prevalent causes of road accidents in India are:

- **Speeding and tailgating** – A greater speed surely gives a feeling of rush to the driver but at the same time increases the risk of his vehicle hitting another vehicle. Driving habits such as tailgating only augments the chance of the tailgater colliding with the vehicle in front.
- **Talking on phone** – When you talk on a phone while driving, your one hand gets engaged in operating the phone whether it's dialing a number or listening to the caller. Even more alarming is texting on phone while driving, as it not only takes off your hands of the steering wheel but also your eyes off the road. Moreover, the conversation distracts your mind. Always avoid using a phone while driving.
- **Drunk driving** – Alcohol interferes with the very basic elements of driving such as vision, reflex and sense of judgment. It is always advisable to request one of your friends or acquaintances to drop you to your place, when you feel you are too drunk.
- **Riding without a helmet** – Wearing a helmet is important for the biker. Head is most susceptible to injuries during a fall. Protecting it with a helmet substantially reduces the chances of fatality.
- **Not wearing seat belt** – Putting a seat belt while driving is very important. It has been scientifically proven that during a head to head collision, a driver wearing a seat belt has a far better chance to survive, without having to suffer any major injury.
- **Breaking traffic rules** – Something as simple as breaking a red light can put the driver and others vulnerable to serious falls and injuries. Ignorance of road signs can prove to be a breakneck too. Do follow traffic rules, it's for your own good.
- **Poor road infrastructure** – This is a very common cause of accidents in India. Unlike other factors, the driver here has to suffer without a fault of his own. A bad road is distinguished by signs such as piles of debris, spilled oil, pits and defective highway lamps.
- **Driving in fog** – Fog reduces the road visibility to a fatal extent. In case of a dense fog, consider putting a halt to your trip. But if it's an official or emergency trip, do remember to use the fog lights and dippers.

The analysis of road accidents in terms of causal factors reveals that drivers' fault is single most important factor responsible for accidents, followed by fault of drivers of other

vehicles, defects in motor vehicles, defect in road conditions and faults of pedestrians. Drivers' fault accounted for 77.1 per cent of total road accidents, 72.6 per cent of the total number of persons killed and 80.3 per cent of the total number of persons injured in road accidents during 2015.

Table: Causes of road accidents in India during 2015

Reason	Accidents	Killed	Injured
Fault of driver	3,86,481 (77.1)	1,06,021 (72.6)	4,01,756 (80.3)
Fault of cyclist	3,695 (0.7)	1,384 (1.0)	2,928 (0.6)
Fault of driver of other vehicles	24,431 (4.9)	6,961 (4.8)	19,686 (3.9)
Fault of pedestrian	7,509 (1.5)	2,690 (1.8)	5,962 (1.2)
Defect in condition of motor vehicle	11,601 (2.3)	4,127 (2.8)	9,818 (2.0)
Defect in road condition	7,314 (1.5)	2,733 (1.9)	6,122 (1.2)
Weather condition	5,781 (1.2)	2,552 (1.7)	4,792 (1.0)
Fault of passenger	6,668 (1.3)	2,657 (1.8)	6,265 (1.2)
Poor light	5,456 (1.1)	2,095 (1.4)	4,809 (1.0)
Falling of boulders	1,087 (0.2)	505 (0.3)	966 (0.2)
Neglect of civic bodies	1,076 (0.2)	416 (0.3)	902 (0.2)
Stray animals	1,534 (0.3)	579 (0.4)	2,044 (0.4)
Other causes	38,790 (7.7)	13,413 (9.2)	34,229 (6.8)
Total	5,01,423 (100.00)	1,46,133 (100.00)	5,00,279 (100.00)

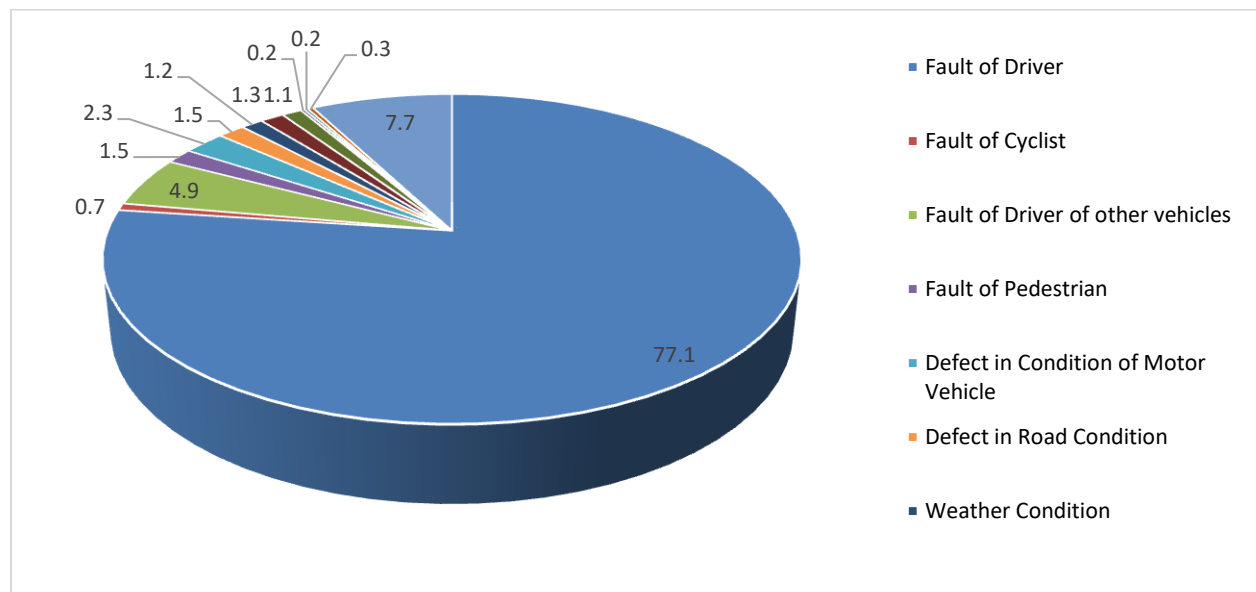


Fig: Causes of road accidents in 2015

According Global Status Report on Road Safety by WHO, road traffic injuries will be the 5th leading cause of death by 2030.

Rank	Leading cause	%
1	Ischaemic heart disease	12.2
2	Cerebrovascular disease	9.7
3	Chronic obstructive pulmonary disease	7
4	Lower respiratory infections	5.1
5	Road traffic injuries	3.6
6	Trachea, bronchus, lung cancers	3.5
7	Diabetes mellitus	2.5
8	Hypertensive heart disease	2.3
9	Stomach cancer	2.2
10	HIV/AIDS	2
11	Nephritis and nephrosis	1.9
12	Self-inflicted injuries	1.9
13	Liver cancer	1.7
14	Colon and rectum cancer	1.7
15	Oesophagus cancer	1.5
16	Violence	1.4
17	Alzheimer and other dementias	1.4
18	Cirrhosis of the liver	1.3
19	Breast cancer	1.3
20	Tuberculosis	1.1

Preventive measures

- **Drive according to road conditions.** Drive slower when the weather is bad. Road surfaces deteriorate in rain, ice or snow. The ability to stop quickly greatly reduces when the roads are not dry.
- **Keep your vehicle in good mechanical order.** Replace worn tires and brakes as needed. Keep windshield washer fluid full and change out windshield wipers on a regular basis.
- **Wear your seatbelt.** Not only do seatbelts keep you safe in an accident, it will help you avoid accidents as well. Seatbelts will hold you in place during an aggressive maneuver. If you make an abrupt maneuver, you may find yourself thrown to the passenger side of the vehicle.
- **Avoid other vehicles.** Back off and don't tailgate or allow others to tailgate you. Try to avoid driving next to another vehicle in case it has to swerve to avoid an animal or debris that may be in the road.
- **Watch out at intersections as many accidents happen here.** Always slow down and look both ways at intersections. Don't assume the other vehicles will stop just because the

light is red. There is always someone trying to get through the intersection during a yellow light.

- **Stay away from 18-wheelers.** These large tractor trailer rigs require extra space when making wide right turns. Therefore, avoid the right side of one, especially if you think the driver will turn right. Don't drive behind an 18-wheeler on the highway. A blown tire can cause an accident.
- **Turn your head to check for traffic before changing lanes.** Do not rely on your mirrors when making a lane change. All vehicles have "blind spots" in which your mirrors cannot see. Do not ride in the blind spots of other vehicles.
- **Look extra carefully in parking lots or parking areas.** Many fender-benders happen in these areas. Follow the rules set up in parking areas. These rules are for the safety of all drivers.
- **Slow down.** Obey the speed limit even if every other car is surpassing it.
- **Let others pass you.** Defensive driving means letting others go ahead-not defending your position in traffic. Avoid the urge to be a vigilante. Accept the fact that someone is always going to think they're in more of a hurry than you. These are the drivers you want to move far away from, not to teach them a lesson.
- **Try to avoid driving in bad weather.** Always keep your windshield wipers going in the rain or snow. Defrost your windshield to keep it from fogging up. Turn on your headlights to help others to see you-this is also the law in some states. If possible, try to avoid driving in the snow at all, especially if your car is rear wheel drive. If you must go out in the snow, drive extra slow, use the brakes and gas pedal gently, and maintain an increased stopping distance.
- **Never get into a car with a drunk driver.** It is always best to have a "designated driver". Never drive after you have had alcoholic beverages. Even one beer can alter your ability to drive safely.
- **Wear a seatbelt.** This is a must. By law in many countries, all cars must have a safety restraint. Buckling up only takes a second and can save your life in an accident. Children should always be in a booster seat or car seat until they are tall enough and heavy enough to sit by themselves. This generally includes children age eight and under. Never put a child in a car or booster seat in the front passenger seat or other seat with airbags. Children should generally be 12 and older when sitting in the front passenger seat.
- **Keep your car and its accessories in good condition.** Keep the tires properly inflated, the brakes adjusted, and the windshields and windows clean. Replace windshield wiper blades when they begin to streak, and all make sure all the lights are working properly.
- **Use your signals properly.** Always use your signal, even if you think no one is there. When changing lanes on the freeway, don't signal as an afterthought or during the lane change. Signal at least a couple of seconds in advance so others know what you're going to do before you do it.
- **Don't tailgate.** No matter how slowly traffic is moving, keep at least two seconds of following distance between you and the car ahead. Any less and you won't be able to stop in time if the driver ahead slams on the brakes.
- **Keep your eyes moving.** Don't get in the habit of staring at the back of the car ahead of you. Periodically shift your eyes to the side-view mirrors, the rear-view mirror, and ahead to where you'll be in 10-15 seconds. Doing this, you can spot a potentially dangerous situation before it happens.

“DONT BE A FOOL, FOLLOW SAFETY RULES”

Summary

Road traffic fatalities have been increasing at about 8% annually for the last ten years and show no signs of decreasing. Two modelling exercises have attempted to predict the time period when we might expect fatality rates to start to decline in a range of countries. Cropper and Kopits predicted that fatalities in India would reach a total of about 198,000 before starting to decline in 2042 and Koornstra predicted an earlier date of 2030 for the peak traffic fatalities in India. If we assume that the present growth rate declines in a linear manner to 0% by 2030, then we can expect about 2,60,000 fatalities by 2030. Neither of these projected dates (2042 and 2030) can be accepted as road safety goals for the country.

Road safety policies in India must focus on the following issues to reduce the incidence of road traffic injuries: pedestrians and other non-motorist in urban areas; pedestrians, other non-motorists, and slow vehicles on highways; motorcycles and small cars in urban areas; over-involvement of trucks and buses; night-time driving; and wrong way drivers on divided highways.

Strategic Planning for Road Safety

It requires a scientific, systematic and programmatic approach to develop – implement – monitor and evaluate road safety in the country.

A Punjab State Road Safety Policy 2014 is proposed with its major focus areas on:

- Horizontal coordination with different ministries and agencies
- Vertical coordination within ministries at national and regional levels
- Legislative framework
- Recognition of importance of Non-motor transport
- Resource mobilization and allocation
- Funding mechanisms
- Delivery of interventions
- Mechanisms for achieving results
- Systems for monitoring and evaluation
- Involvement of civil society and professionals
- Research and technical base and database management

“ROAD SAFETY IS A STATE OF MIND, ACCIDENT IS AN ABSENCE OF MIND”

References

1. Mohan D, Tsimhoni O, Sivak M, Flannagan MJ, Road Safety In India: Challenges And Opportunities, Report No. UMTRI-2009-1, January 2009.
2. <http://www.siamindia.com/statistics.aspx?mpgid=8&pgidtrail=9>
3. <http://www.ibtimes.co.in/passenger-vehicle-sales-india-registered-7-87-growth-fy2016-highest-5-years-673910>
4. <https://www.statista.com/statistics/257822/car-registrations-in-india/>
5. Road Accidents In India – 2015, Government Of India Ministry Of Road Transport & Highways Transport Research Wing, New Delhi.
6. Road Accidents In India – 2009, Government Of India Ministry Of Road Transport & Highways Transport Research Wing, New Delhi.
7. <https://data.gov.in/>
8. Recommendations of the Punjab Governance Reforms Commission, Punjab Governance Reforms Commission, July 2013.
9. <http://www.tribuneindia.com/news/punjab/>
10. Khurana P, Gupta A, Dalal JS, The Incidence Of Road Traffic Accidents In Ludhiana, Punjab, J Punjab Acad Forensic Med Toxicol 2015;15(1).
11. Mohan D, Road Accidents in India, IATSS ReSeARch Vol.33 No.1, 2009
12. <http://olps.punjabtransport.org/Road%20Safety%20Policy.pdf>